

APPARATUS AND METHODS FOR
REPAIRING TENONS ON TURBINE BUCKETS

ABSTRACT OF THE DISCLOSURE

Bucket tip tenons requiring refurbishment are removed from the bucket tips by grinding. Groups of buckets are clamped on a rotatable table in positions adjacent an induction heating coil and a robotic welding arm, respectively. While one group is preheated, the other group of buckets is in a welding location, enabling the welding head on the robotic arm to sequentially apply weld buildup material to the bucket tips. After applying weld buildup material in multiple passes and sequentially to the bucket tips, the buckets are removed, stress-relieved and the weld buildup material machined to provide refurbished tenons. Upon removal of the buckets from the table, the table is rotated to locate the preheated buckets in welding locations and additional buckets are clamped to the table for preheating.